

U.S. Patent Application Serial No. 09/351,544

TYPE

Declaration of Timothy K. Carns

Document B

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FROM WFN0055 REV. 27  
SPECIAL TEST REQUEST FORM  
Electronic Version

ISSUE DATE:  
MAINTAINED BY: ICS Nampa  
UPDATE FREQUENCY: BY CN

FIGURE 1

STR APPROVAL#: 834 SPECIAL TEST REQUEST  
STR SN#: 9700737 DEVICE: 87L02A R 4107  
PURPOSE: TO ELIMINATE CAPACITOR LEAKAGE  
DATE: ORIGINATOR: LEE DEBRULER *gah*  
LOT #: TBD D1549  
PROCESS FLOW: Z37223 MARKETABLE: Y PRODUCTION REJECTABLE: N  
IMPACT ON DPW YLD.: IMPROVE

\*\*\* WAFER PROBE DISPOSITION INSTRUCTIONS \*\*\*

[S] SEND LOT ON AS STANDARD PRODUCTION

[X] Process Eval Tests - Non-Standard

(Any Test Program or Test Temperature Changes Require an STWR)

\*\*\* NON-STANDARD PROCESS REQUIREMENTS AND HOLD POINTS \*\*\*

LOCATION MASK LEVEL LOC. NAME  
0 MULTI-OPER  
PROCESS PER ATTACHED RUNCARD  
USE UNRELEASED MASK SET FOR Z87L02A

APPROVALS

QA DIR : *D. Nussenberg* / email *LD* DATE: *---*  
PLANNING : *S. Veltrop* DATE: *---*  
REP : *S. Veltrop* DATE: *---*  
PRODUCT : *LD* DATE: *---*  
ENG. MGR: *Steve Schalte* / email *LD* DATE: *---*  
PROD MGR: *J. Fulle* DATE: *---*

FAB OPER : *Paul* DATE: *---*  
MGR : *DA* DATE: *---*  
TD MGR\*\* : *DA* DATE: *---*  
ENG. MGR: *J. Espino* / email *LD* DATE: *---*  
PAT1 MGR: *---* DATE: *---*

\* REQUIRES PAT1 MGR SIGNATURE  
(FOR WAFER PROBE OR MOD2 PEVAL)  
\*\* TD MGR APPROVAL FOR TD STRs

L

# 87L02A CAPACITOR OXIDE ETCH SPLITS

Wafer #	Capacitor Oxide	Capacitor Oxide Etch	L40 Expo Split	L40 Etch	<del>L50</del> Etch	Hook
1,11	Thermal	BOE	Yes	D1114	D1114	D1114 wf# 2
2,12	Thermal	BOE	Yes	GOLD	D1114	
3,13	Thermal	Horvath	Yes	Z7223L40	Horvath	
4,14, 21	Thermal	Horvath	No	Z7223L40	Horvath	
5,15, 22	Thermal	Horvath	No	Z7223L40	Horvath	
6,16	Novellus	BOE	Yes	D1114	D1114	D1114 wf# 4
7,17	Novellus	BOE	Yes	GOLD	D1114	
8,18	Novellus	Horvath	Yes	Z7223L40	Horvath	
9,19, 23	Novellus	Horvath	No	Z7223L40	Horvath	
10,20, 24,25	Novellus	Horvath	No	Z7223L40	Horvath	

LOT #

DEVICE : \_\_\_\_\_

015yd

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
30	WAFER START	WF31500						25	—	10839
	LASER SCRIBE	WF37030	LAS01	LASER SCRIBE				25	—	10839
	CLEAN	WF33030	FCLOX	CLEAN			STARTS	25	—	10839
	PARTICLE COUNT	WF36051	PCT01	PC	<30 LPD@0.2 um	PC 3	BARE20	25	—	10839
	DIFF LENGTH	WF36055	SDI01	DIFFUSION LENGTH IRON	> 350 um <9e10 atoms/cm2	DL MEAN 555 Fe 33 e10		25	—	10839
35	CLEAN	WF33020	DCLOX	CLEAN		4.5	NOSIP-OX	25	—	10892
	NOSIP OXIDATION	WF33015	TVE01 HVF0X4	OXIDATION			100NOSIP	25	—	10702 11639
	PARTICLE COUNTS	WF36051	PCT01	PC	<30 LPD@0.3 um	PC 2	SIO2-300	25	—	11639
	THICKNESS MEAS.	WF33050	ELP01	TOX	100 +/- 20 ANG	TOX MEAN 101.73 WFR RANGE 3.372	NOSIP OX	25	—	11637
	1ST NITRIDE DEP	WF33015	NVFOX	NVFO1			NITRIDE	25	—	11520
37	PARTICLE COUNT	WF33015 WF36051	PCT01	PC	<150 LPD@0.3 um	PC 43	NITRIDE30	25	—	11528
	THICKNESS AND RI MEASUREMENT	WF33015 WF33050	ELP01	TNIT	1500+/-150 ANG	TNIT MEAN 1514 WFR RANGE 13	1ST-NITRIDE-Z70	25	—	11528
		WF33015	ELP01	RI	2.027+/-0.03	RI MEAN 2.027	1ST-NITRIDE-Z70	25	—	11528
		WF33050						25	—	11528

2185

LOT #

DIS49

DEVICE :

876024K 4193

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
ENGINEERING TO PROCESS - FIRST EXPOSE										
0095 L10 S/D MASK	COAT	WF34005	DNSOX				#3	25	10/60	10/60
	ALIGN	WF34004	I4 ONLY EXPO9	CA		RETICLE # 14: 1600/0	14: 1600/0	25	10/61	10/61
	DEVELOP	WF34005	DNSOX				#3	25	10/61	10/61
	DICD	WF3430	SEM0X	DICD DENSE	0.80 +/- 0.08	MEAN 18006 3SIG 10391	#3	25	10/61	10/61
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE		# 19	25	10/61	10/61

287LO2AAR4107

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
ETCH USING NITRIDE ETCH SYSTEM										
99	NOSI ETCH NITRIDE	WF35050	PETOX			WFR # 8	P_Z7nitride	25	11101	
	OXIDE REMAINING	WF33050	ELPOX	TOX REMAINING	70 +/- 15 ANG.	TOX MEAN 13.3 RANGE 6.6	NOSI-Nitride	25	11485	
	ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			25	1102	
	ETCH USING POLY ETCH SYSTEM									
101	NOSI ETCH TRENCH	WF35050	PETOX			WFR #	P_Z7trench	25	11101	
	ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			25	11132	
	DRY STRIP	WF35030/ WF35035	MASOX ASHOX		6.20/6.2		ASH	25	11132	
	FSI STRIP	WF33030	RSTOX		R5102		RESIST-STRIP	25	11104	
	STEP HEIGHT	WF35000	OLY01	STEP HEIGHT	0.23 +/- 0.023 um	MEAN 13.2 3SIG 11.8		25	11132	
	FICD	WF33430	SEM0X	FICD	0.75 +/- 0.08	MEAN 11.51 3SIG 6.34		25	11132	
	FINAL INSPECT	WF31025	INSOX	POLYMER	NONE			25	11326	

12:20

noof/smy/dacock

.. J A I E D

DEVICE : 287L02AKT101

LOT # 111

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
102	CLEAN	WF33020	DCLOX1				STEAM-OX	25	11/29	
	STEAM OX	WF33015	TVF01				5KSTEAM	25	11/29	
	THICKNESS MEAS.	WF33015 WF33040	PUV0X	TOX	5000+/-500 ANG.	TOX MEAN 3006 RANGE 57	STEAM-OX	25	1088	
	NITRIDE STRIP	WF33020	NST01				NITRIDE STRIP	25	1155	
104	OXIDE REMOVED	WF33020 WF33050	ELP01	OX REMOVED	+10 OR -90 ANG.	REMAINING OX 120	NIT STRIP	25	10702	
	CLEAN	WF34025 WF33020	INSOX DCIDOX	RES. NITRD W. RIBBON	NONE		RIBBON-OX	25	10702	
	RIBBON OX	WF33015	HVFOX				300OXIDE	25	11167	
	THICKNESS MEAS.	WF33015 WF33050	ELP01	TOX	300 +/- 30 ANG.	TOX MEAN 323 WFR RANGE 4	RIBBON-OX	25	10154	
109	COAT	WF34005	DNS09				#5	25	10700	
	ALIGN	WF34004	I4 ONLY EXPO9			RETICLE # 110390	14: 3150 / 0.0	1		
	DEVELOP	WF34005	DNS09				#5	1		
	KLAS011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN 0.261 R 0.023 YMN 0.134 R 0.034	04-01	25	10120	
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE			25		
	DICD	WF33430	SEM0X	DICD LOWER ISO	1.00 +/- 0.10	MEAN 1.053 3SIG 1.183		25	11357	
	UV BAKE	WF34015	DUV0X				L14L17	25	11357	

#14

LOT # 201549DEVICE : 287409A4P4/07

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
112	P-Well CHAIN IMPLANTS (1,2,3)	IMPLANT CONDITIONS: PWELL 1 - 1.00E13, 700KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL 2 - 3.00E12, 400KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL 3 - 6.30E12, 180KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		WF33000	IMP04 ONLY				HADES	25		10882
113	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN <u>654.8</u> UNF <u>9.3</u>		25		10882
		IMPLANT CONDITIONS: PWELL 4 - 6.80E12, 45KEV, 1.5 TWIST, 5.0 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL VT - 1.00E12, 10KEV, 1.5 TWIST, 5.0 TILT, 11B+								
		WF33000	IMP04				TINKERBELL	25		10882
122	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN <u>245.6</u> UNF <u>4.4</u>		25		10882
		WF35030	MASOX			END PT TIME <u>62</u>	ASH	25		10436
		WF35035	ASHOX			COMPLETE TIME <u>2200</u>	RESIST-STRIP	25		10130
		WF33030	RSTOX					25		10436
160	FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			25		11633
		WF34005	DNS09				#5	25		11633
		WF34004	I4 ONLY EXPO9			RETICLE # <u>110400</u>	14: 296010	25		11633
		WF34005	DNS09				#5	25		11633
160	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN- <u>06568.0623</u> YMN- <u>02488.0372</u>		25		11395
		WF34025	INSOX	VISUAL DEFECTS	NONE			25		11633
		WF33430	SEM0X00	DICD LOWER ISO	1.00 +/- 0.10	MEAN <u>1069</u> 3SIG <u>026</u>	#15 <u>demo03</u>	25		11633
		WF34015	DUV0X				L14L17	25		11395



LOT # 01549DEVICE : 287L-02 HXR4107

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
162	N-WELL CHAIN IMPLANT (I, II, III)		IMPLANT CONDITIONS: NWELL 1 - 1.0E13, 1400KEV, 1.0 TWIST, 2.0 TILT, 31P+							
			IMPLANT CONDITIONS: NWELL 2 - 6.3E12, 530KEV, 1.0 TWIST, 2.0 TILT, 31P+							
			IMPLANT CONDITIONS: NWELL 3 - 6.8E12, 230KEV, 1.5 TWIST, 5.0 TILT, 31P+							
	THERMAWAVE	WF33000	IMP04 ONLY				QUASIMODO	25		10539
		WF36050	TWU01	TWU		TWU MEAN <u>15810</u> UNF <u>0.56</u>		25		11924
387	NWELL VT IMPLANT		IMPLANT CONDITIONS: NWELL VT - 5.1E12, 65KEV, 1.5 TWIST, 5.0 TILT, 49BF2+							
		WF33000	IMP0X				JETSAM	25		10539
		WF36050	TWU01	TWU		TWU MEAN <u>1628.8</u> UNF <u>0.92</u>		25		10539
	DRY STRIP	WF35030 WF35035	MASOX ASHOX		<u>1203</u>	END PT TIME COMPLETE TIME	ASH	25		10539
388	FSI STRIP	WF33030	RSTOX				RESIST-STRIP	25		10894
	FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			25		10894
	CLEAN(NO HF)	WF33030 WF33020	FCLOX DCLOX				BEECLEAN	25		11537
	WELL ANNEAL	WF33015	TVF01 HVF08				WELANNEL	25		11479

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UPDATE: mmoo/smy/dacock

Z37223 TECHNOLOGY

DEVICE : 287602 AAR4107

LOT

# 2549

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
394	CLEAN/OXIDE STRIP	WF33020	DCLOX				OXIDE	25		JH
	Z70 GATE	WF33015	TVF01 HVF08				64THINOX	25		JH
	THICKNESS MEAS.	WF33015 WF33050	ELP01	TOX	64 +/- 5 ANG.	TOX 63.3 WFR RANGE 1.4	Z70 GATE	25		10131
	GATE RTP	WF33010	RTP01				sleepy.1	25		10894
398	THICKNESS MEAS.	WF33010 WF33050	ELP01	TOX	70 +/- 5 ANG.	TOX 69.5 WFR RANGE 2.1	Z70 GATE	25		10894
*****DIRECT TRANSFER TO AMORPHOUS SI DEPOSITION*****										
425	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS		PRE COUNT D	KLA + 113.141 w. #13 Pic at	25		10154
	AMORPHOUS SI DEP	WF33015	PVF03				AMORPH ✓	25		10154
	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	<200 PC'S ADDED	POST COUNT 11 PC DELTA 17		25		11407
	THICKNESS MEAS.	WF33040	PUV0X	TPOLY	3750+/-250 ANG.	TPOLY MEAN 3680 RANGE 4	Z70 AMOR SI	25		11407

3680

4

LOT # D1549DEVICE : 87402

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
IMPLANT CONDITIONS: 1.5E16, 60KEV, 7 DEG, 31P+, E-SHWR=20X										
444	POLY IMPLANT	WF33000	IMP0X	1MP 01			ROQUEFORT	25		11686
485	CAPPING OX DEP	WF32000	NOV0X			NOV02-Jerman	<del>LOWMAN</del>	25		11398
490	AMOR RTP	WF33010	RTP0X				dopey:1	25		11686
494	FSI DEGLAZE	WF33030	FCLOX FCL01				AMOROX	25		10652
	SHEET RHO MEAS.	WF33020 WF36010	RNC01	SHEET RHO	21.5 - 41.5 OHMS/SQ.	RS MEAN 28.45 RANGE 4.02	AMOR RTP	25		10702

LOT # D1549DEVICE : 87402

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
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SPLIT LOT INTO TWO GROUPS FOR CAPACITOR OXIDE

WAFER SPLITS NEED TO COMPLETE CAP OXIDE DEPOSITION AND CAP OXIDATION AT THE SAME TIME

GROUP #1: WAFERS 6 - 10, 16, 20, 23 - 25

Verified Jim Shen

HOLD FOR JIM SHEU TO PROCESS									
TARGET 375 A END OF LINE (DEPOSITED OXIDE SAME AS D1114)									
600	CAPACITOR OXIDE DEPOSITION	WF33015	NOV03			23570X	Z375OX	13	11555
	THICKNESS MEAS.	WF33040	PUV0X			378 Å (Test wfr.)			11555

GROUP #2: WAFERS 1 - 5, 11 - 15, 21, 22

wafer ID verification done. m/n

1655 hrs.

HOLD FOR MIN HUANG TO PROCESS									
TARGET 375 A END OF LINE (THERMAL OXIDE SAME AS D1114)									
600	CAPACITOR OXIDE	WF33015	AVF01				ZCAP425	12	10150
	THICKNESS MEAS.	WF33040	PUV0X			370.85	CAP-OX	12	11338

\* RECOMBINE ALL WAFERS PRIOR TO AMORPHOUS DEPOSITION \*

LOT # D1549DEVICE : 87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
DIRECT TRANSFER TO AMORPHOUS SI DEPOSITION ***PRECLEAN NOT REQUIRED***										
610	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	W After #16 KLA01/100 + R400	PRE COUNT <u>200</u>		25		11219
	AMORPHOUS SI DEP	WF33015	PVF03				2000AMOR	25		11219
	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	<150 PC'S ADDED	POST COUNT <u>15</u> PC DELTA <u>0</u>		25		11575
	THICKNESS MEAS.	WF33040	PUV0X	TPOLY	2000+/-250 ANG	TPOLY MEAN <u>19101</u> RANGE <u>4</u>	Z70 AMOR	25		11575
IMPLANT CONDITIONS: 1.0E16, 30KEV, 7 DEG, 31P+, E-SHWR=180mA										
615	CAP POLY IMPLANT									
		WF33000	IMPOX	<u>6221</u>	<u>out</u>	<u>6418</u>	6223_phoscap	25		11585
620	RTP Amor	WF33010	RTPOX				dopey.1	25		10774 (05:20) 06:30
622	DEGLAZE	WF33020	DCLOX				DEGLAZE	25		10702
*** TD TO PROCESS ***										
0625 L39 CAP POLY MASK	COAT	WF34005	DNSOX				TBD	25		11357
	ALIGN	WF34004	I4 ONLY EXPOX			RETICLE #110420	110420-TBD	1		↓
	DEVELOP	WF34005	DNSOX				TBD	↓		↓
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.14 to 0.14	XMN <u>20119</u> R <u>0349</u> YMN <u>20078</u> R <u>0408</u>		25		11357
	DICD	WF33430	SEM0X	DICD		MEAN <u>834</u> 3SIG <u>673</u>	#01	25		11357
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE			25		10702

LOT

# D1549

DEVICE

: 87LQ2

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
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SPLIT LOT INTO TWO GROUPS FOR CAP POLY ETCH

BOE ETCH (SAME AS D1114)

GROUP #1: 1, 2, 6, 7, 11, 12, 16, 17

HOLD FOR JOHN HORVATH TO ETCH									
*** Z70 L40 ETCH ADJUSTED FOR 2000 ANGSTROM THICKNESS AND NO PEARL ***									
0630 CAP POLY ETCH	CAP POLY ETCH	WF35050	PET0X			WFR # <u>14 &amp; 13</u>	z-amorphous	8	
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			8	
	DRY STRIP	WF35030/5	MAS0X				ASH	8	
	IPO REMOVAL	WF33030	FCL0X				ZCAPOFF	8	
	FICD	WF33430	SEM0X	FICD	0.96 +/- 0.12	MEAN <u>.815</u> 3SIG <u>.035</u>	# 07	8	
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE		# 02	8	

*Hold for Deb Acock.*



LOT

# D1549

DEVICE

: 87L02AAK7.07

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
650	PEARL DEP	WF32000	NOVO3				EAGLE	25		11121
	REFLECTIVITY	WF33040	PUV0X	PRODUCT REFLECTIVITY	0.04 TO 0.07	REFLECTIVITY 0.047	PEARL REFLECTIVITY	25		11121
	THICKNESS MEAS.	WF32000/ WF33040	ELP01	TEST WAFER OXYTK	360 +/- 40 A	MEAN 35.6 SIGMA 3.67	PEARL	25		11402
	HOLD FOR ENGINEERING TO PROCESS (S.BUFFAT, JADAMS/SILARSON)									

HOLD FOR REVIEW OF DICD TARGETTING. DO NOT PROCESS W/OUT JSMY/CARNS APPROVAL

WAFERS 1 - 3, 6 - 8, 11 - 13, 16 - 18 TO RECEIVE BY ROW EXPOSURE SPLITS

(NOTE WAFERS 3 - 5, 8 - 10, 13 - 15, 18 - 25 HAVE PEARL AND OXIDE OVER POLY 1)

0795 L40	COAT	WF34005	DNS09	12/13			#3	25		11357
	ALIGN	WF34004	I4 ONLY EXPO9	EXPOSURE	RETICLE # 110520		I4: TBD / 0.2			11357
	DEVELOP	WF34005	DNS09				#3			11357
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.15 TO +0.15	XMN 0.3308 - 0.249 YMN 0.0058 - 0.482		25		11357
	DICD	WF33430	SEMOX	DICD	0.44 +/- 0.03	MEAN 0.427 3SIG 0.071	8-14	25		11357
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		11357



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## DECORATION

87L02A

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# EXP SETTING

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LOT #

D1542

DEVICE



87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
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SPLIT LOT INTO THREE GROUPS FOR L40 ETCH

HOLD FOR JOHN HORVATH TO ETCH

GROUP #1: 1, 6, 11, 16 ✓

WAFERS TO RECEIVE SAME ETCH AS D1114 (P_SMALL_POLY RECIPE W/ LOW O2 IN O.E.)									
0796 L40 ETCH	POLY ETCH	WF35050	PETOX			WFR # <u>01</u>	p-Small-Poly	4	
	ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			4	
	DRY STRIP	WF35030/5	MASOX ASHOX				ASH	4	10146
	FSI STRIP #1	WF33030	RSTOX			125201	RESIST-STRIP	4	11044
	FSI STRIP #2	WF33030	RSTOX				RESIST-STRIP	4	10923
	OXIDE REMAINING	WF35050 WF33040	PUVOX	OX REMAIN	L10-50 N+ BOX 20-70 A REMAIN	OX REMAIN 4308	L40 POLY ETCH	4	11072
	FICD	WF33430	SEM0X	FICD LOWER ISO	0.45 +/- 0.04	SDRY MEAN 1.059 3SIG 0.65		4	11072 call Engr
	FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			4	11072

LOT # D1549DEVICE : 87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
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GROUP #2: 2, 7, 12, 17 ✓

**HOLD FOR JOHN HORVATH TO ETCH**

WAFERS TO RECEIVE IMPROVED L40 ETCH (P_SMALL_POLY)										
0796 L40 ETCH	POLY ETCH	WF35050	PETOX			WFR # <u>Q2</u>	TBD <u>2-7223-1420039</u>	4		<u>878</u>
	ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			4		<u>878</u>
	DRY STRIP	WF35030/5	MASOX ASHOX				ASH	4		<u>1046</u>
	FSI STRIP #1	WF33030	RSTOX			<u>R5781</u>	RESIST-STRIP	4		<u>11049</u>
	FSI STRIP #2	WF33030	RSTOX				RESIST-STRIP	4		<u>10983</u>
	OXIDE REMAINING	WF35050 WF33040	PUVOX	OX REMAIN	L10-50 N+ BOX 20-70 A REMAIN	OX REMAIN <u>0.48</u> SDEV <u>0.16</u> MEAN <u>0.47</u> 3SIG <u>0.38</u>	L40 POLY ETCH	4		<u>11072</u>
	FICD	WF33430	SEM0X	FICD LOWER ISO	0.45 +/- 0.04			4		<u>11072</u>
	FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			4		<u>11072</u>

LOT # D1549DEVICE : 87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN.
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HOLD FOR JOHN HORVATH TO ETCH

WAFERS TO RECEIVE IMPROVED ETCH (WWAFFLES) AND OXIDE ETCH

GROUP #3: 3 - 5, 8 - 10, 13 - 15, 18 - 25

WAFERS TO RECEIVE IMPROVED L40 ETCH (P\_SMALL\_POLY)

POLY ETCH	WF35050	PETOX		WFR # <u>Q3</u>	<u>2-7223-4410X</u>	<u>17</u>
ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE		<u>17</u>
DRY STRIP	WF350305	MASOX ASHOX			ASH	<u>17</u>
FSI STRIP #1	WF33030	RSTOX		<u>RST01</u>	RESIST-STRIP	<u>17</u>
FSI STRIP #2	WF33030	RSTOX			RESIST-STRIP	<u>17</u>
OXIDE REMAINING	WF35050 WF33040	PUVOX	OX REMAIN	L10-50 N+ BOX 20 - 70 A REMAIN	L40 POLY ETCH	<u>17</u>
FICD	WF33430	SEMOX	FICD LOWER ISO	REMAIN <u>02.08</u> SDEV <u>0.158</u> MEAN <u>0.439</u> 3SIG <u>0.25</u> <u>404</u>		<u>17</u>
FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE		<u>17</u>

0796  
L40  
ETCH

RECOMBINE WAFERS PRIOR TO GRAND OXIDATION

872  
872  
1014  
1044  
10983  
11072  
11072  
11072

Z37223 TECHNOLOGY

UPDATED: 1moo/smy/dacock

LOT #

DLS49

DEVICE

87L02AAR4107

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
803	CLEAN	WF33030 WF33020	FCLOX DCLOX				BEECLEAN	25		11219
	GRAND OXIDATION	WF33015	AVF03				GRANDOX	25		11629
	THICKNESS MEAS.	WF33045 WF33040	PUV0X	TOX	L10-50 N+ BOX 60 +/- 25 A REMAIN	TOX MN 105.5 WFR RING 11.92	GRAND OX	25		11629
	COAT	WF34005	DNS0X			110380	#1	25		11361
809 L40.9 P-LDD MASK	ALIGN	WF34000/ WF34004	EXP0X			RETICLE #	12: 2000/0.1 14: 2000/0.1	25		11361
	DEVELOP	WF34005	DNS0X				#1	25		11361
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN0171 R0148 YMN-0202 R0221				
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		10961
811	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25		11513
	P-LDD IMPLANT	WF33000	IMP01			Impo1	FROLLO	25		11044
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 2443.7 UNF 3.00 END PT TIME		25		10071
	DRY STRIP	WF35030 WF35035	ASH0X MAS0X	ASH02		COMPLETE TIME	ASH	25		11071
820	FSI STRIP	WF33030	RST0X	1305	out 1345	RGTO	RESIST-STRIP	25		10185
	FINAL INSPECT	WF31025	INS0X	POLYMER DEFECTS	NONE		1115 04	25		10185

IMPLANT CONDITIONS: P-LDD 1.6E14, 45KEV, 11 DEG QUAD, 49BF2+

LOT #

D15491

DEVICE :

87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
854	N-LDD IMPLANT	WF33000	IMP01	WV 1443	1001	IMP 1	ESMERALDA	25	10/13/25	
	THERMAWAVE	WF38050	TWU01	TWU	981.8	TWU MEAN UNF 2.44		25	11/24	
	LDD SPACER DEP CLEAN (NO HF)	WF33030 WF33020	FCLOX DCLOX	FCLOX			BEECLEAN	25	10/16	
855	Z70 SPACER	WF32000	NOV01				BANKS (MACRO)	25	11/25/20	
	THICKNESS MEAS.	WF32000 WF33040	PUV02 (PUV02)	TEOS	1500 +/- 150 A	FOX DELTA 1469 % SIG 2.00	Z70 SPACER	25	11/25/20	
	Z70 SPACER ETCH	WF35055	OET0X				P_Z70_SPACER	25	11/589	
867	POST FOX MEAS.	WF35055 WF33040	PUVOX	PUTP02	FOX DELTA 350 +/- 200 A	FOX DELTA 191 RANGE 96	Z70 SPACER ETCH	25	11/072	
	FINAL INSPECT	WF31025	INS0X	VISUAL				25	11/664	
	SPACER RTP	WF33010	RTP0X				bashful.1	25	11/585	

IMPLANT CONDITIONS: N-LDD 6.5E13, 20KEV, 11 DEG QUAD, 31P+

LOT # D1549DEVICE : 87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
900 L41 N+ S/D MASK	COAT	WF34005	DNS0X				#1	25	1136	1136
	ALIGN	WF34000/4	EXP0X			RETICLE #10430	12: 240/0.1 14: 2400/0.1	25	1136	1136
	DEVELOP	WF34005	DNS0X				#1	25	1136	1136
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN-0371 R.0557 YMN-0624 R.0699		25	10818	10818
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25	10818	10818
	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25	10818	10818
IMPLANT CONDITIONS: 1.0E15, 80 KEV, 5 DEG QUAD, 75Ast, E-SHWR 40mA										
930	N+ S/D IMPLANT	WF33000	IMP0X			Imp01	RUFUS	25	11044	11044
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 16.82-4 UNE END PT. TIME 1.6626		25	11044	11044
933	DRY STRIP	WF35030 WF35035	MAS0X ASH0X		120° each	COMPLETE TIME 12.30	ASH 03	25	11044	11044
	FSI STRIP	WF33030	RST0X	1330			RESIST-STRIP01	26	10182	10182
	FINAL INSPECT	WF31025	INS0X	POLYMER DEFECTS	NONE	50504		25	10071	10071

LOT # D1549DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
960 L42 P+ S/D MASK	COAT	WF34005	DNSOX	<u>64809</u>			#1	25		10717
	ALIGN	WF34000 WF34004	EXP0X	<u>64809</u>		RETICLE # <u>116490</u>	I2: 220/0.1 I4: 2200 / 0.1	25		✓
	DEVELOP	WF34005	DNSOX	<u>64809</u>			#1	25		✓
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN: <u>0498</u> R <u>0091</u> YMN: <u>0114</u> R <u>0331</u>		25		10961
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE			25		11344
962	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25		11361
	P+ S/D IMPLANT				IMPLANT CONDITIONS: 1.0E15, 50KEV, 5 DEG QUAD, 49BF2+, E-SHWR 40mA					
	THERMAWAVE	WF33000	IMPOX			<u>ImP03</u>	MCLEACH	25		10994
	DRY STRIP	WF38050	TWU01	TWU		TWU MEAN <u>20537</u> UNF <u>114</u> END PT. TIME <u>7:25</u> COMPLETE TIME <u>7:25</u>	ASH	25		10994
	FSI STRIP	WF35030 WF35035	MASOX ASHOX				RESIST-STRIP	25		10994
963	FINAL INSPECT	WF33030	RSTOX					25		11585
		WF31025	INSOX	POLYMER DEFECTS	NONE			25		11585

247



LOT # D1542DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
974	CLEAN(NO HF)	WF33030 WF33020	FCLOX DCLOX			FCLØ1	BEECLEAN	25		11219
	N2 LATTICE CURE	WF33015	AVFOX				LATTICE	25		11229
985	THICKNESS MEAS.	WF33040	PUVOX	(BPSG-1)	puvØ1		BPSGTDEP(pr)	25		10890
	BPSG-I	WF32000	NOVOX	BPSG-1	(1000 TEOS) (8000 BPSG)		CHALLIS (MACRO)	25		10890
	THICKNESS MEAS.	WF32000/ WF33040	PUVOX	TBPSG	Post 1357D to 1.128 10000 +/- 550 A for the meas. taken	SLOT# TBPSG AFTER %STD	BPSG I DEP(post)	25	12/14	10890
1000	RTP I DENSIFICATION	WF33010	RTPOX				grumpy.1	Ø5	12/14	10557
	BPSG I CMP	WF35095	COP01				MARBLE32 WFR_CLN_OX	25	12-15	10141
1005	THICKNESS MEAS.	WF33040	PUVOX	OX REMOVED	SLM08/SLM 6000 +/- 800 A	MP1 DELTA MP1 STD	POST BPSG I CMP	16	12-15	10141
						MP2 DELTA MP2 STD				
						MP3 DELTA MP3 STD				
						MP4 DELTA MP4 STD				
	FINAL INSPECT	WF31025	INSOX		NONE			25	12-15	10141
1010	BPSG-II	WF33000	NOVOX				HAILEY (MACRO)	25	12/15	10890
	THICKNESS MEAS.	WF32000/ WF33040	PUVOX	TBPSG	3000 +/- 400 A	SLOT# 13 TBPSG AFTER 2847 %STD 440	POST BPSG II	25	12/15	10280
1015	2ND RTP DENSE	WF33010	RTPOX			RtpØ1	energy.1	Ø5	12/15	10557

\* NO pre taken post reflects  
previous lot data Tsem 12/14/98

Lot

D1549

DEVICE

87602

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1095 L50 CONT MASK	COAT	WF34005	DNSOX				#6	25	12/15	1029 11504
	ALIGN	WF34004	14 ONLY EXPOX			RETICLE # 110500	14: 4700 / 0.25	25	12/15	1029 11504
	DEVELOP	WF34005	DNSOX				#6	25	12/15	1029 11504
	KLA5011	WF35000	OLY01	OVERLAY	-0.15 TO 0.15	XMN-0144 R. 0.744 YMN-0531 R. 1163		25	12/15	11395
	DICD	WF33430	SEM0X03	DICD	0.41 +/- 0.08	MEAN 4125 3SIG 1041		25	12/15	11395
	DEVELOP INSPECT	WF34025	INSOX	VISUAL INSPECT	NONE			25	12/15	11685
HOLD FOR JOHN HORVATH TO ETCH										
NOTE: WAFERS 3 - 5, 8 - 10, 13 - 15, 18 - 25 HAVE PEARL AND OXIDE ON POLY 1										
1100	CONTACT ETCH	WF35055	DET05				P_Z7_contact	25	12/18	10146
	ETCH INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			28	12/18	10588
	DRY STRIP	WF35030/ WF35035	ASHOX MASOX				ASH 64	25	12/18	10588
	FSI STRIP	WF33030	RSTOX				RESIST-STRIP	25	12/18	10108
	FICDS	WF33430	SEM0X	FICD	136.45 +/- 0.08	FICD MN 437 3SIG 1010		25	12/18	10589
	FINAL INSPECT	WF31025	INSOX	VISUAL/ POLYMER	NONE		Siemp3	25	12/18	10672

LOT # D1549DEVICE : 87602

LOC.	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
***** DO NOT PRECLEAN UNTIL IMP T1 IS QUALIFIED *****										
1145	PREMETAL CLEAN	WF33020	MCL01	VISUAL INSPECT			TIMEOUT	25	12/18	11250
	***** MEASURE FIRST 6 SLOTS *****									
1150	THICKNESS MEAS.	WF33040	PUV0X	Field Area TOX	12000 +/- 2000A	TOX MEAN RANGE	PRE W1 CMP (PREPOLISH)	25	12/18	11250
	IMP T1	WF32010	SPT02				MULAN	25	12/18	11250
	SHEET RHO MEAS.	WF32010/ WF36000	RSH01	TEST WAFER SHEET RHO	28.3 +/- 4.6 OHMS/SQ	25.9		25	12/19	11687
1155	CVD TIN DEP	WF32001	NOV08				RED	25	12/19	11687
	THICKNESS MEAS.	WF33050	ELP01	TEST WAFER THICKNESS	230 +/- 30 ANG.	224	TIN/SI-T,N,K	25	12/19	11687
1175	STUFFING	WF33010	RTPOX				doc.1	25	12/19	11585
1178	W DEP	WF32001	NOV07				GREEN	25	12/19	11687
	THICKNESS MEAS.	WF36000	RSH01	Test Wafer THICKNESS	6500 +/- 500 A	6420	METALS-CVDW 49PT-THICKNESS	25	12/19	11687
1179	W1 CMP	WF35090	CTP01				RUBY/WAFER-8CN	25	12/19	11687
	OXIDE REMOVED	WF33040	PUV0X	OX REMOVED	625 +/- 375 A	OX DELTA 764 OX SDEV 56	POST W1 CMP (POST)	25	12/19	11687
	FINAL INSPECT	WF31025	INSOX	VISUAL DEFECTS	NONE			25	12/19	11687

LOT # D 1549

DEVICE : 87602

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1185	M1 ALCU W/ARC	WF32010	SPT0X			SPT Ø2	BAMBI-CHX	25	12/19	11250
	REFLECTIVITY	WF33040	PUV0X Ø1	REFLECT.	0.13 +/- 0.05	REFLECT Ø1315 SDEV 6.24	METAL1ALCU	25	12/19	11087
	THICKNESS MEAS.	WF36010	RNC01	THICKNESS	5500 +/- 350	THICK M1 5472 RANGE 2.23	METAL/ZTXXXM1	25	12/19	11087
	COAT	WF34005	DNS0X				#3	25	12/19	11344
1195 L60 M1 MASK	ALIGN	WF34004	14 ONLY EXP0X			RETICLE #10470	14: 2000 / 0.2	1	12/19	11344
	DEVELOP	WF34005	DNS0X				#3	1	12/19	11344
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25	12-20	11573
	PRE-ETCH BAKE	WF34015	DUV0X				METAL	25	12/20	11344
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN6354 R0872 YMN-0151 R0813		25	12-20	11573
	DICD	WF33430	SEM0X	DICD	0.60 +/- 0.06	MEAN -5610 3SIG -0555	SEM03	25	12-20	11361

LOT # D1549DEVICE : 87202

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1199	METAL 1 ETCH	WF35080	METOX			TW# <u>13</u>	P-7120-M1	25	12-20	11132
	ETCH INSPECT	WF31025	INSOX	VISUAL/ POLYMER	NONE			25	12/20	111064
	EKC MET STRIP	WF35070	MSTOX				METSTRIP	25	12-20	11132
1200	FICDS	WF33430	SEM0X	FICD	0.60 +/- 0.08	MEAN <u>1.637</u> 3SIG <u>0.22</u>		25	12/20	10589
	FINAL INSPECT	WF31025	INSOX	VISUAL/ POLYMER	NONE			25	12/20	10672

## WAFERS GO TO ALLOY FOR POST METAL 1 PEVAL

NOT ON IAY	ALLOY	WF33015	YVF01				ALLOY	QTY	DATE	SIGN
	PIX DESCUM	WF35035	MASOX				DESUM	25	12/20	10589
PEVAL PER ATTACHED PEVAL TEST REQUEST SHEET										
1206	PROC EVAL	WF36075	PRB01				Z87L02A_SLM2	25	1-5	11133
	THICKNESS MEAS.	WF32000/ WF33040	PUVOX			MEAN <u>1.814</u> SDEV <u>2.1656</u>	PRE HDP IDL (PRE DEP)	25	1-5	10053
	HDP ILD	WF32000	4-NOV				(D)	25	1-5	10053
	THICKNESS MEAS.	WF32000/ WF33040	PUVOX		16000 +/- 550 A	MEAN <u>1.053</u> SDEV <u>1.808</u>	POST HDP IDL (POST DEP)	25	1-5	10053
1208	ILD-I CMP	WF35095	COP01				GRANITE/ WFR_CLN_OX	25	1-6	11502
	OXIDE REMOVED	WF33040	PUVOX	OX REMOVED	7000 +/- 800 A	OX DELTA <u>6760</u>	POST ILD-I CMP	25	1-6	11502
	FINAL INSPECT	WF31025	INSOX		NONE			25	1-6	11502
	PECVD-II DEP	WF32000	NOVOX	NOVOX	Moscow	PUV01 "pecvd-2"	MOSCOW(MACRO)	25	1-6	11398
1209	THICKNESS MEAS.	WF32000/ WF33040	PUVOX	TTEOS	3000 +/- 400 A	MEAN <u>3.065</u> SDEV <u>2.7</u>	POST PECVD-II	25	1-6	11398

WAFERS  
Re order  
12-20-98

POST MI Peval

SPEC NO.  
WF36075

REV.  
19

-FIGURE 24  
P-EVAL REQUEST FORM

LOT# D1549 REQUESTOR LOEB DATE \_\_\_\_\_  
HP TEST NAME Z87L02A-SLM2EG TEST NAME 87L02AMI  
EST. TEST TIME 40 min / 1.20 mm SUPERVISOR'S SIGNATURE \_\_\_\_\_

PLEASE FILL OUT THE FOLLOWING TABLE AS THE WAFERS ARE TESTED:

WF#	SLOT#	DATE TESTED	START TIME	FILENAME
01	01	12-21	0635	strd1549
02	02	12-21	0633	strd1549
03	03	12-22	0820	strd1549
04	04	12-22	2330	strd1549
05	05	12-22	2330	strd1549
06	06	12-23	0225	strd1549
07	07	12-23	0645	strd1549
08	08	12-23	0830	strd1549
09	09	12-23	0950	strd1549
10	10	12-23	1215	strd1549
11	11	12-23	1450	strd1549
12	12	12-24	0120	strd1549
13	13	12-24	0300	strd1549
14	14	1-3-99	2350	strd1549
15	15	1-4-99	0127/030	strd1549
16	16	1/4/99	0328	strd1549
17	17	1/4/99	0455	STRD1549
18	18	1-4-99	0625	strd1549
19	19	1-4-99	0755	strd1549
20	20	1-4-99	1010	strd1549
21	21	1-4-99	1155	strd1549
22	22	1-4-99	1330	STRD1549
23	23	1-4-99	2015	STRD1549
24	24	1-5	0110	STRD1549
25	25	1-5	0310	STRD1549

tested  
12-21

not  
tested

wafers 15  
\* finished out  
had  
rest  
Rd  
1/4  
time  
again  
Rd

\* did not  
run #22 at this  
time - AL

TO BE SUBMITTED TO THE REQUESTING ENGINEER, THEN DISCARDED.

A

LOT # D549

DEVICE

87L02AA

LOC.	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1210 L62 VIA MASK	COAT	WF34005	DNSOX				3	25	1-7	11633
	ALIGN	WF34004	14 ONLY EXPOX			RETICLE # 116460	14: 4000 / 0.45	25	1-7	11633
	DEVELOP	WF34005	DNSOX				3	25	1-7	11633
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	X: 0.1273S -0.580 Y: 0.0903S -0.484		25	1/7	11644
	DICD	WF33430	SEM0X	DICD DENSE	0.48 +/- 0.06	MEAN: .492 3 SIGMA: .1612	# 1	25	1-7	11688
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE			25	1-7	11633
***** USE OXIDE XL ETCHER and ASH on MASOX ONLY*****										
1216	VIA ETCH	WF35055	OET05				P_Z7_VIA	25	1-7	10882
	OXIDE REMOVED	WF33040	PUV0X	STACK REMOVED	28000 +/- 5000A	OX REMOVED: 25342	L62 VIA ETCH (POST)	25	1-7	10672
	ETCH INSPECT	WF31025	INSOX <sup>2</sup>	VISUAL DEFECTS	NONE			25	1-7	11101
	DRY STRIP	WF35035	MASOX ONLY		*** MASOX ONLY *** 11/10/02	END PT. TIME: 4:13:20 COMPLETE TIME: 4:00:00	Z7_L62	25	1/7	10708
	SEMITOOL	WF35070	MSTOX			10250V	METSTRIP	25	1/7	10897
1217	FICDS	WF33430	SEM0X	FICD DENSE	0.50 +/- 0.08	FICD MEAN: 4.2001V 3SIG: 0.1117	0.00/0.035	25	1/7	11700
	FINAL INSPECT	WF31025	INSOX <sup>2</sup>	VISUAL/ POLYMER	NONE			25	1/7	11101

LOT # D1549DEVICE : 87402AA

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
***** MEASURE FIRST 6 SLOTS *****										
1233	THICKNESS MEAS.	WF33040	PUV0X	Field Area TOX	30000 +/- 5000A		PRE WII CMP (PREPOLISH) $\text{\textcircled{A}}$	25	1-8-99	10774
	RF/IMP TI	WF32010	SPT02			SPT02	Rafiki	25	1-8	10888
1234	CVD TIN DEP	WF32001	NOV08			NOV08	RED	25	1-8	10299
1235	WII DEP	WF32001	NOV07			NOV07	GREEN	25	1/8	11608
	WII CMP	WF35090	CTP01				GARNET / WFR-CLN	25	1/8	10141
1236	OXIDE REMOVED	WF33020 WF33040	PUV0X	OX REMOVED	625 +/- 375	MP1 Delta 485	POST W-II CMP (POST) $\text{\textcircled{A}}$	25	1/9	11589
						MP1 STD 41				
						MP2 Delta 489				
						MP2 STD 38				
						MP3 Delta 460				
						MP3 STD 40				
	FINAL INSPECT	WF31025	INS0X		NONE			25	1/9/99	11589
	METAL 2 DEP	WF32010	SPT0X				Flit-CH3/4	25	1/4/94	11690
1237	REFLECTIVITY	WF33040	PUV0X	PRODUCT REFLECT.	0.13 +/- 0.05	REFLECT 1413 SDEV 1.1	METAL II ALCU	—	1/9	10888
	THICKNESS MEAS.	WF36010	RNC01	STACK THICK	8000 +/- 650	AL THICK 8240 1.578	METAL / Z7XXX / M2	—	1/9	10888

measure on

 $\text{\textcircled{A}}$  recipe in Short loops/Eng - 208-D1549

puv02



LOT # D1549DEVICE : 87702

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1240 L85 M2 MASK	COAT	WF34005	DNSOX			EXP 09	#3	25	1-9	10818
	ALIGN	WF34004	I4 ONLY EXPOX			RETICLE #110450	I4: 2000 / 0.2	1	1	
	DEVELOP	WF34005	DNSOX			EXP 09	#3	25	1-9	
	PRE-ETCH BAKE	WF34015	DUVOX			DUV 01	METAL	25	1-9	11608
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN-2132 R.0670 YMN-2233 R.1018		25	1-9	10232
	DICD	WF33430	SEM0X	DICD LOWER ISO	0.60 +/- 0.06	MEAN 1528 3SIG 1018	<del>SLAT</del> <del>13</del>	25	1-9	11672
	DEVELOP INSPECT	WF34025	INSOX	VISUAL DEFECTS	NONE			25	1-9	115
								25	1-9	01

SLAT#09 : 5773

(\*) wfr # 23 541  
 mean = .0305  
 3sig = .0305

, 2788

LOT # 1549DEVICE : 87202

X METAL NR 4/99

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1243	METAL 2 ETCH	WF35080	<del>METAL 2 ETCH</del> METOX			TW #	P 7120 M2	25	1/10	1551
	ETCH INSPECT	WF35080	INSOX	VISUAL/ POLYMER	NONE			25	1/10	10708
	EKC MET STRIP	WF35070	MSTOX			met strip	METSTRIP	25	4/10	10589
1245	FICDS	WF33430	SEMEX	FICD LOWER ISO	0.60 +/- 0.08	MEAN 0.124 3SIG 0.185	SEMEX	25	1/10	10708
	FINAL INSPECT	WF31025	INSOX	VISUAL/ DEFECTS	NONE			25	1/10	10708
1290	PASSIVATION	WF32000	NOVOX				ARCO (MACRO)	25	1-10	10774
	STACK THICKNESS	WF32000/ WF33040	PUVOX		10000+/-1275		PASSIVATION	25		
	PIX COAT	WF34010	PIX01				26	75	1-10	11761
	RESIST COAT	WF34005	DNSOX				#7	25	1-10	11573
1295	ALIGN	WF34000/4	EXPOX			RETICLE # 110460	12: 390/0 14: 3900/0	25	1-10	11361
L70	DEVELOP	WF34005	DNSOX				#7	25	1-10	11573
PAD	ACETONE STRIP	WF35070	MST03				Acetone	25	1-10	11344
MASK	PIX INSPECT	WF34025	INSOX					25	1-10	11072
	PIX CURE	WF34010	PIX01				32	25	1-10	10961
1300	PAD ETCH	WF35055	OETOX			OETO3	P_PAD_Etch	25	1/11	11064
L70	ETCH	WF31025	OETOX					25	1-11	11326
1310	ALLOY	WF33015	YVFO1				ALLOY	25	1/11	11568

LOT

# D6549

DEVICE

: 87402

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1339	PIX DESCUM	WF35035	MASOX				DESCUM	25	1-11	11055
	PEVAL PER ATTACHED PEVAL TEST REQUEST SHEET									
	PROC EVAL	WF36076	PRB01	SLW			87102A_SLM	25	1-16	12672
1500	SHIP	WF37000						25	1-16	10598

Re-Etch DET01 - 2.7120 - RE-ETCH (30 SECONDS)

ÉOL PÉVAL

**-FIGURE 24**  
**P-EVAL REQUEST FORM**

LOT# D1549 REQUESTOR LEB DATE \_\_\_\_\_  
HP TEST NAME 87L02A-5LM EG TEST NAME 87L02A m I  
EST. TEST TIME 40 min / 1 hr SUPERVISOR'S SIGNATURE [Signature]

**PLEASE FILL OUT THE FOLLOWING TABLE AS THE WAFERS ARE TESTED:**

REF#	SLOT#	DATE TESTED	START TIME	FILENAME
01	1	1-12-99	2353 2005	STR-D1549 Td2d1549
02	2	1-12-99	2005	EXP 1-13-99 <del>STR-D1549</del> Td2d1549
03	3	1-14-99	0110	Td2d1549
04	4	1-14	0220	Td2d1549
05	5	1-14	0335	Td2d1549
06	6	1-14	0450	Td2d1549
07	7	1-14	1445	td2d1549
08	8	1-14	1630	td2d1549
09	9	1-15	0620	td2d1549
10	10	1-15	0820	Td2d1549
11				
12				
13	13	1-15	1020	Td2d1549
14	14	1-15-16 Dec	1720 0300	td2d1549 } td2d15
15	15	1-16 Dec	1720 0400	td2d1549 } Not done to
16				
17				
18	18	1-16-99	0750	Td2d1549
19	19	1-16-99	1001	Td2d1549
20	20	1-16-99	1215	Td2d1549
21				
22				
23				
24	1			
25				

TO BE SUBMITTED TO THE REQUESTING ENGINEER, THEN DISCARDED.

WJ# 14, 15, 18, 19, + 20  
did not print out -